Assignment description
Hackathon on AI in higher education – Preparatory module

Case

During the hackathon, you will develop a solution for the case:

> *We know that students' motivation is influenced by the elements of autonomy, social cohesion and competence. Create an AI application that has a positive impact on one or more of these elements within your educational context.*

Component 1: The educational principle

Talk to each other, and think about which element or elements of the case you want to influence using your AI solution. Write down your idea clearly and succinctly, and state why your idea will help motivate students or has some other added value for your educational practice. If you need some inspiration, the World-Wide-Web-AI-Safari offers many fitting examples of the applications of AI.

In any case, you should describe:

- Which element of the case you want to influence.
- How you are going to achieve that.
- What data you will need for this.
- How this data will be collected.
- What the AI application you are developing will be doing with the data.
- And why you think this will add value to the educational situation.

Component 2: Ethical aspects and degree of control

Now that your basic idea is in place, you will discuss the ethical aspects and the degree of control of your AI application. Of course, this is a thought exercise, because the application does not yet exist.

Describe:

- What ethical aspects you will be considering when designing the application.
- The potential risks in terms of algorithmic bias, misinterpretation and privacy.
- How you want to prevent those risks.

If you need some help, the substantive justification and Elements of AI | section 6 | Societal impact of AI offer good starting points.

You should then describe:

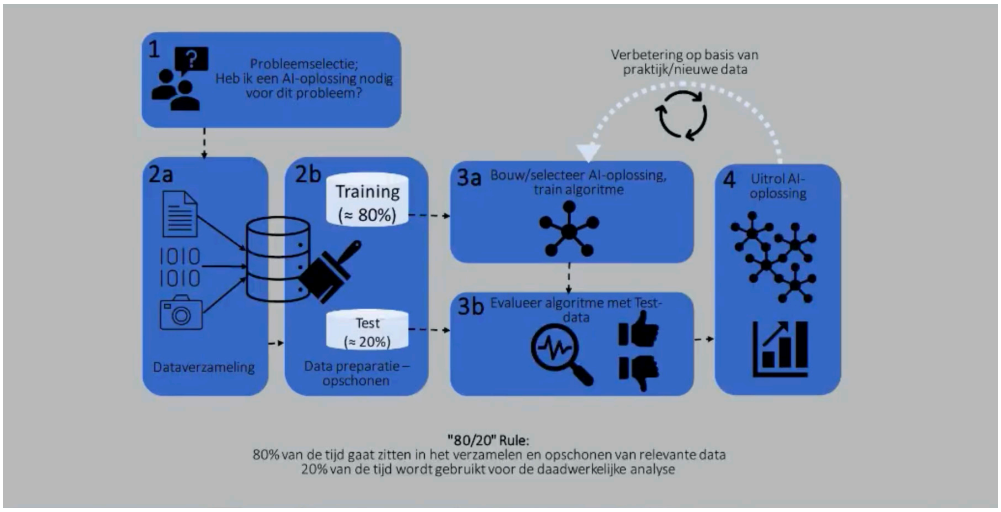
- How the concept of control is regulated within your AI application.
- And why that degree of control is appropriate to the application you have in mind.

If you need some help, the interview with Inge Molenaar in the preparatory module offers a clear view of the six levels of automation in higher education.

Component 3: The proof of concept[1]

Now that you have a clear picture of the core of your AI application, and the role that ethical aspects and control play in this, it is now time for the next step: the proof of concept. You will collaborate with the Jedis to set up your virtual work environment and build your application concept: A working prototype of the AI application that you have in mind.

Follow the four steps described in Caspar's video (in Dutch) worden beschreven. Also note down the choices you make; A description of this process will form part of the jury presentations tomorrow morning.



Step 1 – Problem selection

- Describe your 'problem' from the perspective of the AI application. This can, of course, be based on your description in component 1.
- Clearly indicate how your AI application will be used and what the application should be able to do (Application & Capability domain)
- Looking ahead to the following steps, you will need to establish a definition of done: A description of exactly what you are going to make.

Step 2 – Data preparation

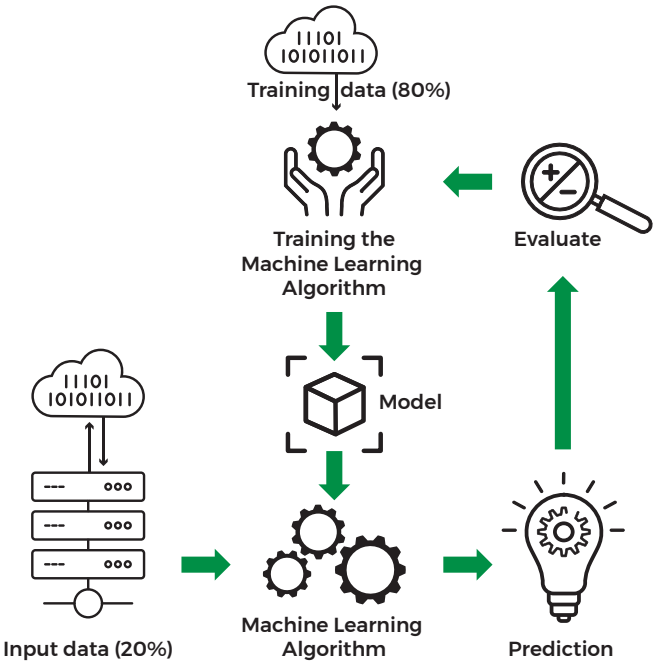
- Provide a clear description of the data you will need to make your AI application work.
- Also describe how you will prepare this data so that it can be used by your application.
- Think about important side issues such as labels, how the data will be visualised and how you will achieve this exactly.
- Collect your data now, or create a fictitious data set.
- Divide your data into approximately 80% training data and 20% test data.

Step 3 – Model selection & training

- Now, with the help of your Jedis, build your AI application (or a visual representation of it). If you like, use the model below:

[1] Every step within this component will only be relevant if you follow the 'Proof of concept' expansion module. If you do not, follow steps 1 & 2 and amend the texts slightly

- Train the model using your training data, and test the model using your testing data.
- Fine-tune your design if necessary to make it even stronger.



Step 4 – Roll-out

Once you have a working prototype, it is time for the roll-out. In our case, we will prepare the prototype for presentation to the jury and the other teams.

- Take another thorough look at your application.
- Is the way your prototype currently operates enough to convince the jury of your proof of concept?
- Fine-tune anything that needs tweaking.

Component 4: Pitching to the jury[2]

- Prepare a pitch of up to 10 minutes, in which you give a clear summary of the outcomes from the previous steps.
- Make sure that the pitch contains at least the following components:

✓ he educational principle and the choices that are relevant to it (elaboration of component 1).
✓ A reflection on the 'ethical elegance' and the degree of control of your AI application (elaboration of component 2).
✓ A demonstration of the proof of concept
✓ A description of how you went in four steps from idea to proof of concept (elaboration of component 3)

There is no fixed format, but remember that the purpose is to convince the jury of the strength of your application. The members of the jury will use the form on the following page for their assessment.

[2] Only if you decide to include the 'Judging' expansion module. If you do not, the team pitches will take place here.